

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020



January 14, 2013

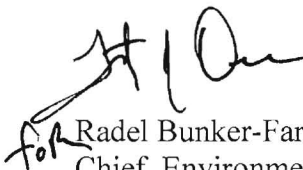
Reply to Attn of: RE-13-004

New Mexico Environment Department
Attn: Mr. John E. Kieling, Chief
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Subject: WSTF Monthly Environmental Activity Report for December 2012

Enclosed is the WSTF Monthly Environmental Activity Report for December 2012. This reporting format includes an Executive Summary that provides important events/observations as Enclosure 1, a paper copy of the report as Enclosure 2, and a CD-ROM with the report in PDF as Enclosure 3.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. If you have any questions or comments concerning this submittal, please contact me at 575-524-5733.


for Radel Bunker-Farrar
Chief, Environmental Office

3 Enclosures

cc:

Mr. Dan Comeau
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Mr. Baird Swanson (*CD only)
Ground Water Quality Bureau
New Mexico Environment Department
5500 San Antonio Drive NE
Albuquerque, NM 87109

Executive Summary

The following summarizes important information associated with NASA White Sands Test Facility (WSTF) environmental program activities in December 2012:

- NASA completed shipments of hazardous, universal, and special waste to Clean Harbors on December 19, 2012.
- NASA performed additional shallow soil vapor sampling in the 200 Area during December 2012. Data obtained from the additional sampling will be incorporated into the 200 Area Phase I Investigation Report due to NMED by January 31, 2013.
- NASA continued a variety of activities related to the closure of the 200 Area Evaporation Tank Unit.
- NASA completed 38 of 38 groundwater sampling events and all required remediation system sampling scheduled for December 2012.
- The PFTS operated on 27 of 31 days in December 2012 at an average flow rate of 877 gallons per minute. During December 2012, the PFTS extracted and treated approximately 100 acre-feet of groundwater.
- The MPITS operated on 19 of 31 days in December 2012. The system extracted and treated approximately 3.08 acre-feet of contaminated groundwater, which was discharged to the infiltration basin. NASA and Envirogen Technologies continued operation of a pilot scale bioreactor designed to treat NDMA-contaminated groundwater.
- NASA continued project planning for the drilling and installation of additional groundwater monitoring wells at WSTF.
- NASA submitted a variety of documents in December 2012, including a request for a “contained-in determination” for liquid waste at the ETU, a proposal to use an alternate format for the 200 Area Phase I investigation report, a class one permit modification request, and several review fee payments for documents previously submitted to NMED.
- During December 2012, NASA continued a project to upgrade the sanitary sewer at WSTF and connect to the City of Las Cruces sewer system.
- There were no reportable non-compliance issues in December 2012.



National Aeronautics and
Space Administration

Monthly Environmental Activity Report

December 2012

Submitted January 14, 2013

NM8800019434

NASA Johnson Space Center White Sands Test Facility

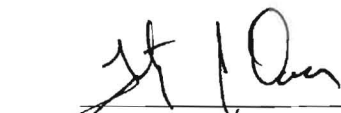
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NASA Johnson Space Center White Sands Test Facility

Monthly Environmental Activity Report

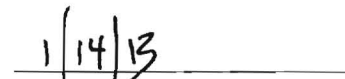
December 2012

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


for _____

Radel Bunker-Farrah

Chief, Environmental Office


Date

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- NASA continued a variety of activities related to the closure of the 200 Area Evaporation Tank Unit.
- NASA completed 38 of 38 groundwater sampling events and all required remediation system sampling scheduled for December 2012.
- The PFTS operated on 27 of 31 days in December 2012 at an average flow rate of 877 gallons per minute. During December 2012, the PFTS extracted and treated approximately 100 acre-feet of groundwater.
- The MPITS operated on 19 of 31 days in December 2012. The system extracted and treated approximately 3.08 acre-feet of contaminated groundwater, which was discharged to the infiltration basin. NASA and Envirogen Technologies continued operation of a pilot scale bioreactor designed to treat NDMA-contaminated groundwater.
- NASA continued project planning for the drilling and installation of additional groundwater monitoring wells at WSTF.
- NASA submitted a variety of documents in December 2012, including a request for a “contained-in determination” for liquid waste at the ETU, a proposal to use an alternate format for the 200 Area Phase I investigation report, a class one permit modification request, and several review fee payments for documents previously submitted to NMED.
- During December 2012, NASA continued a project to upgrade the sanitary sewer at WSTF and connect to the City of Las Cruces sewer system.
- There were no reportable non-compliance issues in December 2012.

1.0 Waste Management

- 1.1 NASA completed shipments of hazardous, universal, and special waste to Clean Harbors on December 19, 2012. The shipments consisted of eight containers with 915 lbs (416 kg) of hazardous waste, 33 containers with 2,127 lbs. (967 kg) of universal waste, and two containers with 227 lbs. (103 kg) of special waste (non-DOT regulated).
- 1.2 During December 2012 NASA continued a project to decontaminate and decommission the hazardous waste drain line that connects hazardous waste generation points in the WSTF 200 and 800 Areas to the 200 Area Evaporation Tank Unit. Field activities were completed in December 2012, while data review and associated reporting will continue.
- 1.3 During December 2012 NASA continued a project to remove waste from the 200 Area Evaporation Tanks as part of the planned closure of this permitted hazardous waste management unit.

2.0 Environmental Monitoring

- 2.1 In December 2012 NASA sampled 38 of 38 scheduled groundwater monitoring.
- 2.2 Required sampling at NASA's groundwater remediation systems was completed as scheduled.
- 2.3 NASA continued project planning and preparation for the drilling and installation of four off-site "data gap" monitoring wells. Drilling is expected to begin in January 2013 at monitoring well BLM-40, south of the WSTF Mid-plume Constriction Area.

3.0 Corrective Actions

3.1 Plume Front Treatment System

- PFTS Operation – The PFTS operated on 27 of 31 days in December 2012 at an average flow rate of 877 gallons per minute. The system extracted and treated approximately 100 acre-feet of groundwater, most of which was injected to the aquifer following treatment. 21,605 gallons of groundwater were discharged to the on-site Modu-tanks during PFTS startup operations. Approximately 2.05 acre-feet were discharged to grade at the PFI wells during backwashing and startup activities.
- PFTS Shutdowns, Repairs, and Modifications – There were three unplanned shutdowns of the PFTS in December 2012. On December 20, 2012 a remote operated valve malfunctioned during a system maintenance operation, causing the system to shut down automatically. The system was restarted within one hour. On December 23, 2012 the system shut down automatically when a level transducer falsely indicated a high well level. The faulty level transducer was repaired, but the system was left off line for several days to accommodate scheduled maintenance on the overhead electrical power distribution system. The system was restarted on December 27, 2012. On December 31, 2012 the system was manually shut down to initiate repairs on a minor leak. No untreated water was released to the environment.

3.2 Mid-plume Interception and Treatment System

- MPITS Operation – The MPITS operated on 19 of 31 days in December 2012. The system extracted and treated approximately 3.08 acre-feet of contaminated groundwater, which was discharged to the infiltration basin following treatment. The MPITS was shut down on December 20, 2012 to conduct an aquifer recharge test. Data loggers and level transducers were placed at strategic monitoring wells in the Mid-plume Constriction Area to record water levels as a function of time. The MPITS is scheduled to be restarted in January 2013.
- MPITS Shutdowns, Repairs, and Modifications – There were no unplanned shutdowns and one planned shutdown of the MPITS in December 2012. The MPITS ran 100% of the planned

time. The ongoing aquifer recharge test will be limited in duration in order to complete bioreactor pilot testing through the middle of March 2013.

- Bioreactor Pilot Test – NASA continues to work with Envirogen Technologies to operate a pilot scale bioreactor in the MPITS building to study the feasibility for bioremediation of NDMA-contaminated groundwater at WSTF. The bioreactor completed the first phase of pilot treatment and discontinued the feed of contaminated groundwater on December 20, 2012. The second phase of testing, scheduled to start in January 2013, will test the bioreactor's capability to treat groundwater with volatile organic contaminants in addition to NDMA.

3.3 200 Area Investigation

- NASA completed review of the analytical data from the analysis of sorbent modules installed in shallow soil borings in the 200 Area. Based on the results, several additional locations were sampled with sorbent modules to evaluate potential "hot spots" or other areas of interest.
- NASA proposed an alternate format for the 200 Area Phase 1 Investigation Report, which was accepted by NMED. NASA continued development of that report, which is due to NMED by January 31, 2013.

3.4 600 Area Investigation

- NASA submitted the fee for NMED review of the pilot test work plan for extraction of perched groundwater beneath the 600 Area Closure.

3.5 Wastewater Lagoon Investigation and Closure

- NASA discussed the Wastewater Lagoon Investigation Work Plan and Closure Plan with NMED and prepared to address forthcoming NMED comments.

3.6 Groundwater Tracer Testing

- NASA continues to plan a groundwater tracer test, which will be conducted in the WSTF 200/600 Areas and in the Mid-plume Constriction Area (MPCA). NASA's May 10, 2012 *Work Plan for Tracer Testing in the 200/600 Areas and Mid-plume Constriction Area*, approved by the NMED Hazardous Waste Bureau on July 20, 2012, provides specific information regarding the planned test. Though originally scheduled for as early as August 2012, the tracer test has been postponed until early 2013 in order to allow sufficient time for the completion of work at the Mid-plume Interception and Treatment System. Wells MPE-8 and MPE-9 were recently activated and wells MPE-1, MPE-10, and MPE-11 were equipped with new pumps to allow for consistent pumping rates. When steady-state operating conditions have been achieved in the MPCA, the groundwater tracer test can be performed as indicated in the May 10, 2012 work plan.

4.0 Non-compliance Issues

- The NASA Hazardous Waste Permit requires that other non-compliance conditions be reported to NMED. There were no instances of other non-compliance during this reporting period that require notification under the Permit. The criteria for non-compliance reporting in this report (as defined by 40 CFR 270.30(l)(10) and EPA interpretations at RCRA Faxbacks 13142 and 13686) would be any non-compliance with permit conditions that is not classified as minor recordkeeping, reporting, and similar oversights that were corrected once discovered. Additionally, there were no issues meeting the previously defined criteria (minor items immediately corrected) that were part of a repeating pattern of non-compliance.

5.0 Miscellaneous

5.1 Sanitary Sewer upgrade

During December 2012 NASA continued the project to upgrade the sanitary sewer system at WSTF and connect to the City of Las Cruces sewer system. The sewer upgrade includes a combination of both gravity and force main in addition to four lift stations and is scheduled for completion in early 2013. NASA will keep NMED informed about the status of the sewer project, and its potential impacts on the ETU Closure project. Construction progress to date includes the following:

- Construction of Line A along Holman Road is substantially complete.
- Construction continues on the Holman Road lift station. NASA has completed reviewing and approved technical submittals from the contractor for the lift station pumps. The contractor has ordered the pumps.
- Approximately 5,400 feet of Line B (from Holman Road to the WSTF 100 Area) has been completed, leaving approximately 16,900 feet to complete. NASA has provided design drawings to the construction contractor, indicating a change in routing along NASA's Well Road. The sewer line is to be moved from the center of the road, to the westbound lane of the road. This design change also includes raising the elevation of the road surface and various drainage improvements. NASA is negotiating with the contractor on the cost for the Line B design changes.
- Line C (the force main from the Second TDRSS Ground Terminal to the WSTF 400 Area) is substantially complete, with the exception of the line under the STGT Road.
- Line D (the force main from the 400 Area to the 200 Area) is substantially complete.
- Approximately 3,000 feet of Line E (from the 800 Area to the 300 Area) has been installed. During excavation for this line in the 300 Area, a contractor employee noticed what he thought was a diesel odor coming from the soil. Excavation was halted and NASA Safety and Environmental personnel were notified. Based on the soil sampling and analysis performed to date, which include standard analytical methods, NASA believes that the excavated soil is not a listed hazardous waste per, does not exhibit the characteristic of a hazardous waste, and does not contain weathered petroleum-based compounds. Based on these results, NASA plans to let this soil aerate in order to address the odor, then thin-spread the soil in the area it was excavated from.
- Approximately 3400 feet of Line E (from the 100 Area to the 200 Area) has been installed. The construction contractor is currently working on the excavation and installation of the sewer line where it crosses Gardner Spring Arroyo.
- Line F (400 Area) is substantially complete.
- Line I (from Lift Station #3 to Line E) is substantially complete. Bedrock was encountered in portions of this trench.
- Line J (from the Hypervelocity facility to Lift Station #3) is substantially complete.
- Line K (from Lift Station #3 to the 800 Area) is substantially complete. Bedrock was encountered in portions of this trench.
- Line L (from various 400 Area buildings toward Lift Station #2) is substantially complete, with the exception of the line under Road L.

6.0 Documents Submitted

6.1 Documents submitted in December 2012

- NASA submitted the *2012 Annual Fee Payment* of \$54,500 on December 3, 2012.
- NASA submitted a *Request for a "Contained-In Determination" for ETU Treatment Liquid Waste* on December 13, 2012. NMED approved the request on December 21, 2012.
- NASA submitted the *Fee Assessment for 300 Area Closure Soil Vapor Sampling, Second Follow-up Report (NMED Invoice Number HWB-NASA-12-017-R)* for \$500 on December 13, 2012.
- NASA submitted the *Fee Assessment for Periodic Monitoring Report -Third Quarter 2012 (NMED Invoice Number HWB-NASA-12-018)* for \$2,000 on December 13, 2012.
- NASA submitted the *200 Area Investigation Phase 1 Status Report – Proposed Alternate Format* on December 13, 2012. NMED approved the proposed alternate format on December 21, 2012.
- NASA submitted the *Fee Assessment for Evaluation of the 600 Area Groundwater Monitoring Network (NMED Invoice Number HWB-NASA-12-019)* for \$2,000 on December 13, 2012.
- NASA submitted the *Class One Permit Modification to NASA's Hazardous Waste Permit* on December 17, 2012.
- NASA submitted the *Fee Assessment for Evaluation of the 600 Area Perched Groundwater Extraction Pilot Test Work Plan (NMED Invoice Number HWB-NASA-12-022)* for \$1,000 on December 26, 2012.
- NASA submitted the *Fee Assessment for Evaluation of the Westbay Well Conversion Work Plan (NMED Invoice Number HWB-NASA-12-021)* for \$1,000 on December 26, 2012.

6.2 Status of documents submitted in previous months

- NASA submitted the *Evaluation of the 600 Area Groundwater Monitoring Network* on October 29, 2012. NASA received NMED's November 6, 2012 fee assessment for review of the report and submitted the payment on December 13, 2012.
- NASA submitted the *Westbay Well Conversion Work Plan* on November 1, 2012. NASA received NMED's November 20, 2012 fee assessment for review of the plan and submitted the payment on December 26, 2012.
- NASA submitted the *Request for Approval to Use Cluster Well Design for Two Data Gap Monitoring Well Locations (BLM-40 and BLM-41)* on November 29, 2012. NMED approved the request on December 7, 2012.
- NASA submitted the *Abbreviated Investigation Report for Solid Waste Management Unit 10 Soil Removal* on October 5, 2012. NASA received NMED's October 16, 2012 fee assessment for review of the report and provided the \$2,000 review fee on November 16, 2012.
- NASA submitted the *NASA WSTF Wastewater Lagoon Areas Closure Investigation Work Plan (IWP) and Wastewater Lagoon Areas Historical Information Summary (HIS)* on October 15, 2012. NASA received NMED's October 25, 2012 fee assessment for review of the documents and provided the \$10,000 review fee on November 15, 2012. NMED review is ongoing.
- NASA submitted the *Results of Soil Vapor Sampling at the 300 Area Closure* on October 22, 2012. NASA received NMED's November 9, 2012 fee assessment for review of the report and submitted the payment on December 13, 2012.

- NASA submitted the *200/600 Area Semi-Annual Soil Vapor and Groundwater Data for NASA WSTF – June 2012 Data* on November 1, 2012. NASA received NMED's November 13, 2012 fee assessment for review of the report and submitted the payment on December 14, 2012.
- NASA submitted the *600 Area Perched Groundwater Extraction Pilot Test Work Plan* on November 13, 2012. NASA received NMED's December 11, 2012 fee assessment for review of the plan and submitted payment on December 26, 2012.

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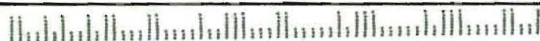


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New Mexico Environmental Department
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